NEW YORK NEUROLOGICAL SOCIETY.

Meeting of March 5th, 1888.

The President, DR. C. L. DANA, in the Chair.

THOMSEN'S DISEASE.

The President reported a case, in some respects atypical, and showed a specimen of muscle. The patient was a man, thirty-five years of age, single. He had been delicate as a child, and at the age of fifteen or sixteen years had masturbated, but not to excess. At the age of fourteen years he had been affected with talipes varus in the left leg, but it was cured by tenotomy. The symptoms of the disease in question had not appeared until the twentieth year, when the patient began to notice stiffness of the hands and difficulty in opening them when closed ; also stiffness of the leg and of the muscles of mastication. He tired easily, especially in the arms. Until recently he had a high-pitched child's voice and a child's larynx. Erections were incomplete, and there was mental difficulty in concentrating his thoughts. The muscular development was good. Measurement around the biceps gave ten inches in each arm. The dynamometer showed 40° in the right hand and 38° in the left, the normal measurement by the president's dynamometer being 43° to 50°. There were tonic contractions of the calf muscles and of the pillars of the fauces. Striking the muscles of the arm or forearm caused tonic contractions in those muscles. Striking the biceps with the percussion hammer would cause a welt and a myoid tumor as well. There was no increase of irritability to mechanical stimulation in the nerves. By galvanism, Erb's reaction was obtained. There was increased muscular irritability, also a closure tonic contraction which persisted as long as the current continued to be passed. There was closure tetanus both to the cathode and to the anode. There was no opening contraction to either pole. A peculiarity of the reaction to faradaism was that in the arm the contractions persisted after the current ceased to be passed. There was no ankle

clonus, no increase of the reflexes, and no spastic condition. In the eye the fundus was normal, but there was a fibrillary contraction of the muscles of the lid. There was vaso-motor weakness ; the hands and feet were red, and easily became cold.

A piece of the supinator longus had been removed ; also, for comparison, a piece of the same muscle from the president's own arm. These specimens had been placed in weak alcohol, and stained with picro-carmine and Bismark brown. The specimen taken from the patient showed an increase of the nuclei of the sarcolemma, an increased number of fibres, and, in addition, a dichotomous division of the fibres such as were found in muscle of the heart. This was characteristic of Thomsen's disease, and was supposed to indicate reversion to an earlier type. The tonic contractions of this disease, too, were characteristic of unstriped muscle fibre.

DR. GEORGE W. JACOBY had examined the specimens, and compared them with those from his own case. He did not consider this the typical case which Erb's monograph had described. Erb had excluded all the published cases but eight. Erb's typical case showed no disease of the central nervous system. In the president's case there was at least a suspicion of such disease. The reactions of the muscles, too, were incomplete, or failed to fulfill the requirements given by Erb. The speaker did not, however, believe in Erb's lines. He thought they were too close. While this case did not come under the heading as limited by Erb, it did not come under the name as understood by others. Erb's theory was that of a disorder of the muscles themselve, a congenital malformation of the muscular system. If the fissuring of the muscles and the increase of nuclei in the case under discussion were dependent upon a central affection, this alone was an interestiog fact. It would demonstrate that, microscopically, alone, a diagnosis of myotonia congenita could not be mode. Our knowledge of primary muscle affections was not yet on a solid basis. It was possible that there was first trouble in the central nervous system, from which the other proceeded.

DR. C. HEITZMAN had examined the specimens with a

low power, and had been impressed with the belief that this was not a genuine case of Thomsen's disease. In a typical case the nuclei of the muscles were augmented. The president had made Erb's mistake when he spoke of the nuclei of the sarcolemma. The sarcolemma was a structureless membrane. There was also augmentation of the sarcoplasts, or muscle-corpuscles. There was too much muscle substance from the earliest period ; hence the name myotonia congenita. The president's case, on the contrary, could not be called congenital, as the disease had not developed until the twentieth year. Moreover, the muscle-fibres were not distinctly augmented in size ; compared with those in Dr. Jacoby's case the difference was marked. Besides, the fissuring was not prominent. For these reasons he was loathe to accept the diagnosis. He was, on the other hand, unable to tell what else the condition could be.

DR. J. B. EMERSON had examined the patient's eyes. There was no insufficiency of the muscles, and the pupils had reacted normally.

DR. M. A. STARR realized that we could not yet lay down any positive deductions in regard to electrical reactions. In degeneration we observed the pure reaction of degeneration, an intermediate reaction of degeneration, and the normal muscle reaction. Erb had given the reactions for three cases only. Other cases might not substantiate those results. He considered the president's case valuable and one to be put on record. For reliable data a large number of cases were required. Even Dr. Heitzman's objection of muscular anomalies was not fatal to the theory of its being a case of Thomsen's disease.

The PRESIDENT explained that he had not called the case one of myotonia congenita, but an atypical case of Thomsen's disease. It remained to be proved whether myotonia was always congenital. He had recently seen a case which commenced at the eighth or tenth year. Since the appearance of Erb's book four additional cases had been reported besides his. He agreed with Dr. Heitzman that the enlargement of the fibres was not positive. He had measured the fibres with a stage micrometer in the specimen

from Dr. Jacoby's case, in that from the case under discussion, and in that from his own arm. He had found the fibres in the first $\frac{1}{400}$ to $\frac{1}{300}$ of an inch broad; in the second, $\frac{1}{250}$ to ^{1} ; and in his own, $\frac{1}{450}$ of an inch. Thus, in the case under discussion, some of the fibres were larger and some smaller than normal. The increase of the nuclei, however, was shown in some of the specimens as typically as in Erb's plate. He acknowledged that the fissuring might have been produced artificially by tearing. Electrically, there was greatly increased irritability of the muscles both to galvanism and to faradism. The contractions were tonic with closure tetanus. There was normal excitability of the nerves. Clinically, the patient presented the phenomena of Thomsen's disease. It remained to be proved whether the phenomena of Thomsen's disease could be produced by disorders in which the central nervous system was involved.

TUMOR OF THE BRAIN.

DR. STARR presented a specimen. The patient was a woman, fifty-six years of age at the time of her death, who for two years had presented the general symptoms of tumor of the brain—vertigo, projectile vomiting, dulness of the mental faculties, and optic neuritis. During the last five months she had been examined carefully, but without revealing any evidence as to the locality of the tumor, except on one occasion, when during an attack of vertigo she fell forward and to the right. This was not a prominent symptom, and it was the only evidence pointing to cerebellar disease. The tumor was the size of a hen's egg. It was found on the lower surface of the tentorium, simply resting upon and compressing one lobe of the cerebellum. There was no adhesions and it was unfortunate that no symptoms had pointed to its location, as it might have been removed easily. In 1878, Nothnagel had remarked that tumors of the lateral lobes of the cerebellum did not give rise to the symptoms of inco-ordination common to other cerebellar tumors.

BASEDOW'S DISEASE.

DR. J. WEST ROOSEVELT presented the report of a case, with that of the autopsy. The patient had been

admitted into the Roosevelt Hospital on May 25, 1887. She was a widow, forty-seven years of age, a housekeeper. Both the personal and family history were good. Two years before, she had begun to complain of palpitation, dyspnœa upon exertion, and swelling of the throat, which was largest upon the right side. She could not lie upon that side. In the course of a year the eyes began to protrude, and at the time she entered the hospital she had a profuse watery diarrhœa. The pupils were found to be equal, and the reaction to light and to accommodation were good. The lids did not follow the eyeballs. The neck measured thirteen inches around the lower thyroid region, and ten inches and a half around the upper thyroid region. There was dysphagia to solid food. The pulse was from 100 to 120, and the respiration 38. The apex-beat was found in the fifth space, in the nipple line. There was epigastric pulsation and the area of dullness was slightly increased. There was a short systolic murmur at the apex. There was a systolic thrill over the jugulars, also a continuous venous hum. The pulmonary resonance was exaggerated. The veins of the retina pulsated, but the arteries did not. There was no tremor. The patient lived until May 31st. She suffered from watery diarrhœa and restlessness, but was not otherwise sick. In walking to the bath-room one evening, she fell dead on the floor. The autopsy showed the thyroid reduced in size, but still moderately enlarged and of a pink color. The kidneys showed a trace of fibrous tissue, but otherwise the organs were normal. There was apparently nothing abnormal in the medulla nor in the sympathetic or vagus nerves. Microscopic examination of these parts also showed nothing.

Dr. W. O. MOORE had seen twelve cases, all in women of the average age of forty years, the youngest being thirty-one and the oldest forty-five. Ophthalmoscopic examination had simply shown enlargement and tortuosity of the blood-vessels. Great relaxation of the bowels had been present in one of the cases, as many as ten evacuations taking place in the day, which it was impossible to control. Electricity had been of no avail in these cases. All had

presented the three characteristic symptoms, exophthalmia, thyroid enlargement, and rapid action of the heart. All had shown the symptom to which Von Graefe had first called attention, namely, a disturbance of the usual co-ordination of the movements of the eyeball and the upper lid, so that when the patient looked downward below the horizontal meridian the lid no longer followed the eyeball in its motion, but halted in its course. This fault in the action of the lid was supposed to be due to some defect in the orbicularis, and was not present in patients having prominent eyes from other causes. Occasionally the prominence was so great as to cause the eye to be exposed at all times, whether the patient was awake or asleep. In one case in his experience suppuration had occurred and the eye had been lost. The patient, aged forty-five years, stated that when a child she had lost the sight of the right eye by an accident, and that one year before coming under observation, she had noticed commencing enlargement of the neck, dyspnœa upon exertion, and prominence of the left eye. Six months later, vision for near objects began to fail, and four weeks before coming under notice the left eye had become painful and inflamed. An examination, December 13, 1886, showed in the right eye phthisis of the bulb, total corneal leucoma, and exophthalmia so marked that, although the eyeball was atrophied, the lids were as full as in the usual healthy state. The eyelids on this side covered the globe fully when shut. In the left eye the exophthalmia was so great that the lids were retracted to their full extent and the eyeball was dislocated through the commissure of the lids. The ocular conjunctiva was chemotic and the cornea was cloudy through its whole extent. At the upper border of the cornea there was a serpiginous ulcer; in other words, there was a keratitis from loss of nutrition and exposure to the air. The pulse was irregular at 110. The patient was admitted into the Post-Graduate Hospital, the outer canthus was cut, hot-water applications were made, and the parts were protected by lanolin. In spite of treatment, perforation took place, with escape of the vitreous and lens. The eye began to recede and phthisis bulbi developed. Had

this case been seen earlier, the speaker would have united the upper and lower lids, thus covering the eyeball. At the end of a few weeks the lids would have been reopened, when, as a rule, the exophthalmia would be found improved and the corneal trouble removed. For constitutional treatment the patient should receive digitalis, ergot, and tonics. This case was remarkable from the facts that an eye was lost by suppuration and that this loss was associated with phthisis in the other eye. The loss of an eye from exposure was so rare that the speaker knew of but ten reported cases in this country, while Wells had reported only one case.

Dr. STARR said that the fact that no lesion had been found in the sympathetic in Dr. Roosevelt's case did not, of course, prove anything conclusive. Ross had reported eight cases in which such lesion had been found out of twelve cases, as far back as 1882. The pathology, however, was not clear. It was difficult to understand how any one lesion could produce all the phenomena of this disease. The hypothesis accepted by Gowers was that of lesion of the vagus nucleus in the medulla. The rapid pulse would be accounted for by the loss of the inhibitory power of the vagus. It was known, too, that vaso-motor disturbances were produced by irritation of the medulla in this region. The speaker had some time since collected twenty-one cases of lesion of the medulla, in eight of which the lesion was in its upper part, in the region of the nucleus of the tenth nerve. In all those cases there were subjective flushings and objective increase of perspiration, while in the thirteen in which the lesion was in the lower part of the medulla there were no vaso-motor symptoms whatever, thus substantiating the hypothesis of the physiologists that there was a vaso-motor centre in the medulla and that this centre was in the neighborhood of the nucleus of the tenth nerve.

The speaker had personally observed seven cases, five in the female and two in the male. In all but one palpitation of the heart had been the first symptom. This disproved the theory that the goître was primary, and that the other symptoms were due to the pressure of the tumor upon the

pneumogastric nerve. The pulse had ranged between 90 and 155. In all but one the eyes had been prominent. In six there had been nerve symptoms, in four tremors, in four Von Graef's symptom, and in six flushes. Mental disturbance had been present in one case, in which there had been delirium every night for several months, and subacute mania for several weeks. The first symptom in this case had been insomnia, which resisted treatment. The speaker supposed it to have had its origin in a condition of the vessels of the brain similar to that in the back of the eye and the thyroid gland. Digitalis had done no good in his experience. Ergot and bromide had quieted the tremor, but no drug which he had tried had reduced the action of the heart. He had used electricity according to Benedict's recommendation, but without result. He had himself, when in Vienna, watched the treatment of three cases in which Benedict had given a good prognosis, but had failed to find any reduction of the pulse while the galvanism was being used. In his own cases he had tried every method described as galvanization of the sympathetic ; he had placed the poles upon either side in front of the sterno-cleido-mastoid, behind the sterno-cleido-mastoid, and at the back of the neck and at the epigastrium, carrying the current as high as nine milliampères, which was as strong as could be borne with a small electrode, and he had never been able to produce any retardation of the pulse. Dr. Janeway had expressed himself as having had the same experience.

Dr. A. D. ROCKWELL had met with about thirty cases of this disease, and in nine cases he had observed an approximate cure. He had employed diet, galvanism, and very full doses of digitalis, bromide of zinc, ergot, and iron. He had authentic records of his results. He believed that the cases not benefited by treatment were organic, and that those benefited were functional in origin. Those having all the cardinal symptoms were more often responsive to treatment than those in which the symptoms were more incomplete. He recalled a case in which there was a pulse of 110 reduced to 80. There was puffiness of the eyelids in that case. In the galvanic applications one pole had been placed

over the eyelid, and the other behind the sterno-cleido-mastoid muscle at its upper third. In another case the pulse had ranged from 130 to 150 for several years. There was dilatation of both pupils, and there was a pulsating swelling over the solar plexus. This patient was placed upon the use of a milk diet and persistently treated for many months, when the pulse fell to below 100, and the swelling of the thyroid and the exophthalmia had become less.

Dr. STARR asked whether Dr. Rockwell had observed a reduction of the number of the heart-beats while the current was being used, also whether he had ever seen paling of the face and dilatation of the pupils—phenomena which followed galvanization of the sympathetic when needles are used.

Dr. ROCKWELL replied that he had not made his observations during the application, but that subsequently such slowing had been demonstrated. Lowering of the pulse was also a very common result of general faradization.

Dr. JACOBY considered exophthalmic goître a rare disease. For eight or nine years he had seen in his dispensary from six to seven hundred neurological cases a year. Not more than twelve of them had been cases of exophthalmic goître. The patients had been regular in attendance and the treatment had been persistent, but he had tried every means heralded without result. Subaural galvanization had been without effect upon the color or the pulse. He considered the disease a hopeless condition. Bodily and mental rest constituted about all that could be done. He had tried faradization according to the recommendation of Vigouroux, but also without result. He thought the exophthalmia the least constant symptom. Where goître was present, one side of the neck was usually larger than the other. Some said that the right was always the larger. This he could contradict, as in a case which he had recently seen with Dr. Birdsall the enlargement had been equal upon both sides. Von Graefe's symptom was not always present. Tremor was often the first symptom. In one case in his experience tremor had existed for a year before the development of the other symptoms. At the end of the second year these had become well developed, and bronzing of the skin also

was present. Vigouroux had stated that the electric resistance was diminished in all cases, and even in the commencement of the disease. This, if true, would be an important diagnostic point. In twenty cases Wolfenden had also found this lowered electrial resistance. Histories of two of these cases had been published in full. In one of the latter the resistance was only 300 ohms. It was mentioned that there was profuse sweating in this case. In the second, the resistance was 200 ohms. Of this case it was said that there were clamminess of the surface and sweating. In the other eighteen cases the resistance was from 500 to 1,300 ohms. The speaker said that the standard of resistance, however, varied according to the method used. It had been given as 300,000 to 400,000 ohms by Jolly; Gärtner gave it as 30,000 to 40,000; and here we estimated it at a third or a quarter. He had recently tested the resistance in three cases, his method having been to place the body in the circuit, the electrodes being equal in size and wet. When the galvanometer needle ceased to be deflected, the body was taken out of the circuit and a resistance coil inserted until the deflection of the needle was again brought to the same point. The amount required equaled the resistance of the body. Comparative observations were at the same time taken upon himself. The first case was that of a woman, twenty-eight years of age, with exophthalmia, palpitation, and sweats. The resistances obtained were as follows:

Through the palms, - - -	Patient,	6,000 ohms;
	Self,	8,000 "
Through the goître, - - -	Patient,	1,200 "
	Self,	2,400 "
Through the posterior part of the neck, - - - - - -	Patient,	1,400 "
	Self,	2,400 "

The second case, Dr. Birdsall's, presented goître with palpitations and exophthalmia, and the comparative observations were taken upon Dr. Birdsall and himself. The resistances obtained were as follows:

Patient, through the hands, 5,000 ohms; through the goître, 800 ohms; through the posterior part of the neck,

1,000 ohms. The measurements in himself were respectively, 5,500, 2,400, and 2,000 ohms, and in Dr. Birdsall, 8,000, 1,000, and 1,000 ohms.

In the third case the resistances were:

	Patient.	To control subjects.
Through the hands	5,000 ohms	11,000 and 10,000 ohms.
Through the thyroid	1,000 ohms.	4,000 and 3,000 ohms.
Through the neck, antero-posteriorly..	1,500 ohms.	3,000 and 3,000 ohms.

The reduction was thus scarcely a quarter, certainly not a half, and not more than would be accounted for by the maceration of the skin due to the abundant perspiration in these cases, or, as in the goître, to the fluxion of blood. The speaker failed to see how any importance could be attached to the test as a symptom.

The PRESIDENT was surprised to hear that there was any dispute in regard to the possibility of lowering the pulse by galvanism. In a case of Basedow's disease in Bellevue Hospital a pulse of 140 was found lowered fifteen or twenty beats after the current had been applied. The sedative effect of galvanism was generally admitted, though we could not say whether it was produced through the pneumogastric or through the sympathetic nerve. Dr. Starr's theory he thought incorrect. Lesion of the nucleus of the pneumogastric should give the same symptoms as division of its trunk, and this never gave rise to the phenomena of Basedow's disease. It might perhaps be said that this disease was due to lesion of the nucleus of the pneumogastric and neighboring parts. He thought that the resistance was diminished in these cases—at least slightly, perhaps 1,200 ohms. In testing he placed one electrode on the region of the seventh vertebra and the other on the sternum.

Dr. ROOSEVELT had had the same experience as Dr. Starr and Dr. Jacoby. He had used both strong and weak currents without any influence on the sympathetic nerve. He was surprised to hear digitalis recommended. He be-

lieved that digitalis was without value for heart failure except from organic disease. He had had five cases of exophthalmic goître under observation. Two of the patients had improved, but both were young anæmic girls. The measurement of electrical resistance he thought a difficult problem, because the factors varied.